

OM protein - protein search, using sw model

Run on: June 15, 2009, 01:03:29 ; Search time 73 Seconds
(without alignments)
1137.335 Million cell updates/sec

Title: US-10-561-671-2
Perfect score: 531
Sequence: 1 TSNVTFTVNNATTVYGQNVY.....RTYTVPFSSSTGSYTANWNV 99

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 4548778 seqs, 838641292 residues

Total number of hits satisfying chosen parameters: 8

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 95%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_200812:*
1: geneseq:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being indicated

score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	% Query Match			DB	ID	Description
	Score	Length				
1	531	100.0	99	1	ADW21532	Adw21532 Bacillus
2	531	100.0	99	1	ADW25806	Adw25806 Bacillus
3	531	100.0	99	1	AEA06468	Aea06468 Bacillus,
4	531	100.0	99	1	AEB72819	Aeb72819 Carbohydr
5	531	100.0	99	1	AEI54700	Aei54700 Glucoamyl
6	531	100.0	99	1	AOG56868	Aog56868 Bacillus
7	531	100.0	613	1	ADW21550	Adw21550 Bacillus
8	531	100.0	613	1	ADW71773	Adw71773 Anoxybaci

ALIGNMENTS

RESULT 1
ADW21532
ID ADW21532 standard; protein; 99 AA.
XX
AC ADW21532;
XX
DT 24-MAR-2005 (first entry)
XX
DE Bacillus sp. carbohydrate-binding module (CBM).
XX
KW Starch; sugar; high fructose starch-based syrup;
KW high fructose corn syrup; fermentation; fuel; ethanol; hydrolysis;
XX carbohydrate binding module

KW sweetener; carbohydrate-binding module.
 XX
 OS *Bacillus* sp.
 XX
 PN WO2004113551-A1.
 XX
 PD 29-DEC-2004.
 XX
 PF 25-JUN-2004; 2004WO-DK000456.
 XX
 PR 25-JUN-2003; 2003DK-00000949.
 PR 24-OCT-2003; 2003DK-00001568.
 XX
 PA (NOVO) NOVOZYMES AS.
 XX
 PI Viksoe-Nielsen A, Andersen C, Pedersen S, Hjort C;
 XX
 DR WPI; 2005-075255/08.
 XX
 PT Producing soluble starch hydrolysate comprises subjecting aqueous
 PT granular starch slurry below initial gelatinization temperature of
 PT granular starch to action of Glycoside Hydrolase Family13 enzyme, and
 PT fungal amylase.
 XX
 PS Claim 2; SEQ ID NO 2; 68pp; English.
 XX
 CC The invention relates to a method (M1) of producing a soluble starch
 CC hydrolysate. The method involves subjecting an aqueous granular starch
 CC slurry to the action of a first and second enzyme, where the first enzyme
 CC is member of the Glycoside Hydrolase Family13, having alpha-1,4-
 CC glucosidic hydrolysis activity and comprising a functional carbohydrate-
 CC binding module (CBM), and a second enzyme chosen from a fungal alpha-
 CC amylase (EC 3.2.1.1), a beta-amylase (EC 3.2.1.2) or glucoamylase
 CC

(commonly known as glucan 1,4-alpha-glucosidase, EC 3.2.1.3). The invention discloses amino acid sequences for functional CBM (SEQ ID Nos 1-3), enzymes having alpha-amylase activity (SEQ ID Nos 4-18), and enzymes having alpha-amylase activity with a functional CBM (SEQ ID Nos 19-22). Also described are: (i) a process (M2) for the production of high fructose starch-based syrup (HFSS), where a soluble starch hydrolysate produced by method (M1) is subjected to conversion into HFSS, such as high fructose corn syrup (HFCS), (ii) a process (M3) for production of a fermentation product, where a soluble starch hydrolysate produced by method (M1) is subjected to fermentation into a fermentation product, such as citric acid, monosodium glutamate, gluconic acid, sodium gluconate, calcium gluconate, potassium gluconate, glucono delta lactone, sodium erythorbate, itaconic acid, lactic acid, gluconic acid, ketones, amino acids, glutamic acid (sodium monoglutamate), penicillin, tetracycline, enzymes, vitamins, such as riboflavin, B12, beta-carotene or hormones, (iii) a process (M4) for production of fuel or potable ethanol, where a soluble starch hydrolysate produced by method (M1) is subjected to fermentation into ethanol, (iv) use of an enzyme having alpha-amylase activity in a process for hydrolysis of starch, and (v) use of an enzyme having alpha-amylase activity in a process for hydrolysis of granular starch. Method (M1) is useful for producing a soluble starch hydrolysate which is useful for production of high fructose starch-based syrup (HFSS), a fermentation product, fuel or potable ethanol. An enzyme having alpha-amylase is useful for the hydrolysis of granular starch. The hydrolysates are useful as sweeteners or as precursors for other saccharides, such as fructose. This sequence represents a carbohydrate-binding module (CBM).

Sequence 99 AA;

Query Match	100.0%;	Score 531;	DB 1;	Length 99;
Best Local Similarity	100.0%;	Pred. No. 1.6e-50;		
Matches 99;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;

QY	1	TSNVTF	TVNNATT	VYGQNV	VVVGNI	PELGNW	NIANAI	QMT	PSSYPT	WKT	TVSLP	QGKAIE	60
Db	1	TSNVTF	TVNNATT	VYGQNV	VVVGNI	PELGNW	NIANAI	QMT	PSSYPT	WKT	TVSLP	QGKAIE	60
QY	61	FKFIKK	SAGNVI	WENIAN	RTYTV	PF	SSTG	SYTAN	WNV	P			99
Db	61	FKFIKK	SAGNVI	WENIAN	RTYTV	PF	SSTG	SYTAN	WNV	P			99

RESULT 2	
ADW25806	
ID	ADW25806 standard; protein; 99 AA.
XX	
AC	ADW25806;
XX	
DT	07-APR-2005 (first entry)
XX	
DE	Bacillus sp. Carbohydrate-Binding Module Family 20 CBM.
XX	
KW	Carbohydrate-Binding Module Family 20; carbohydrate-binding module;
KW	degradation; starch; fermentation; baking.
XX	
OS	Bacillus sp.
XX	
PN	W02005003311-A2.
XX	
PD	13-JAN-2005.
XX	
PF	25-JUN-2004; 2004WO-US020499.
XX	
PR	25-JUN-2003; 2003DK-00000949.
PR	25-JUN-2003; 2003US-0482589P.
DD	26 JUN 2003 00000000 00000000

PR 29-JUL-2003; 2003US-0490751P.
 PR 14-OCT-2003; 2003US-0511044P.
 PR 24-OCT-2003; 2003DK-00001568.
 PR 27-OCT-2003; 2003US-0514854P.
 PR 10-MAY-2004; 2004US-0569862P.
 XX
 PA (NOVO) NOVOZYMES AS.
 PA (NOVO) NOVOZYMES NORTH AMERICA INC.
 XX
 PI Taira R, Tkagi S, Hjort C, Vikso-Nielsen A, Allain E, Udagawa H;
 XX
 DR WPI; 2005-101485/11.
 XX
 PT New hybrid enzyme comprising a catalytic module with alpha-amylase
 PT activity and a carbohydrate-binding module, useful for liquefying starch
 PT for subsequent fermentation to produce e.g., ethanol, citric acid,
 PT vitamins, or antibiotics.
 XX
 PS Claim 1; SEQ ID NO 10; 102pp; English.
 XX
 CC The invention relates to a hybrid enzyme comprising a catalytic module
 CC from a fungal alpha-amylase and a carbohydrate-binding module (CBM). Also
 CC described is a variant of a fungal wild-type enzyme comprising a CBM and
 CC an alpha-amylase catalytic module. The hybrid enzyme or the alpha-amylase
 CC variant is useful for liquefying starch, where a gelatinized or granular
 CC starch substrate is treated in aqueous medium with one of the above
 CC enzymes. The method involves contacting the treated starch with a yeast
 CC to produce fuel or potable ethanol. The method involves fermenting the
 CC treated starch into a fermentation product, such as citric acid,
 CC monosodium glutamate, gluconic acid, sodium gluconate, calcium gluconate,
 CC potassium gluconate, glucono delta lactone, sodium erythorbate, itaconic
 CC acid, lactic acid, gluconic acid, ketones, amino acids, glutamic acid
 CC (sodium monoglutamate), penicillin, tetracycline, enzymes, vitamins,
 CC such as riboflavin, D12 beta carotene or biotin. The starch substrate is

CC such as riboflavin, B12, beta-carotene or hormones. The starch slurry is
CC contacted with a polypeptide comprising a carbohydrate-binding module,
CC but not catalytic module. The hybrid enzyme or variant enzyme is useful
CC for preparing a dough-based product, which involves adding the enzyme to
CC the dough. This sequence represents a CBM.

XX

SQ Sequence 99 AA;

Query Match 100.0%; Score 531; DB 1; Length 99;
Best Local Similarity 100.0%; Pred. No. 1.6e-50;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNINAIQMTFPSSYPTWKTTVSLPQGKAIE 60
|||||
Db 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNINAIQMTFPSSYPTWKTTVSLPQGKAIE 60

QY 61 FKFIKKDSAGNVIWENIANRITYTVPFSSTGSYTANWNV 99
|||||
Db 61 FKFIKKDSAGNVIWENIANRITYTVPFSSTGSYTANWNV 99

RESULT 3

AEA06468

ID AEA06468 standard; protein; 99 AA.

XX

AC AEA06468;

XX

DT 28-JUL-2005 (first entry)

XX

DE Bacillus, carbohydrate binding module.

XX

KW glucoamylase; carbohydrate binding module; fermentation.

XX

CC

OS Bacillus sp.
XX
PN WO2005045018-A1.
XX
PD 19-MAY-2005.
XX
PF 27-OCT-2004; 2004WO-US035991.
XX
PR 28-OCT-2003; 2003US-0515017P.
XX
PA (NOVO) NOVOZYMES NORTH AMERICA INC.
PA (NOVO) NOVOZYMES AS.
XX
PI Borchert T, Danielsen S, Allain E;
XX
DR WPI; 2005-347063/35.
XX
PT New hybrid enzyme comprising an amino acid sequence of a catalytic module
PT having glucoamylase activity and a sequence of a carbohydrate-binding
PT module, useful for producing a fermentation product such as ethanol, or
PT syrup.
XX
PS Disclosure; SEQ ID NO 4; 105pp; English.
XX
CC The invention relates to a hybrid enzyme which comprises an amino acid
CC sequence of a catalytic module having glucoamylase activity and an amino
CC acid sequence of a carbohydrate-binding module. The hybrid enzyme is
CC useful for producing a fermentation product such as ethanol, or syrup.
CC The present sequence represents the amino acid sequence of a Bacillus
CC glucoamylase, carbohydrate binding module.
XX
SQ Sequence 99 AA;

Query Match 100.0%; Score 531; DB 1; Length 99;
Best Local Similarity 100.0%; Pred. No. 1.6e-50;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNIANAIQMTFPSSYPTWKT TVSLPQGKAIE 60
|||||
Db 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNIANAIQMTFPSSYPTWKT TVSLPQGKAIE 60

QY 61 FKFIKKDSAGNVIWENIANRITYTVPFSSTGSYTANWNV 99
|||||
Db 61 FKFIKKDSAGNVIWENIANRITYTVPFSSTGSYTANWNV 99

RESULT 4
AEB72819
ID AEB72819 standard; protein; 99 AA.
XX
AC AEB72819;
XX
DT 06-OCT-2005 (first entry)
XX
DE Carbohydrate-binding module #3.
XX
KW glucoamylase; fermentation; cereals; alcohol; ethanol; fuel ethanol;
KW potable ethanol; industrial ethanol; gelatinization.
XX
OS Bacillus sp.
XX
PN W02005069840-A2.
XX
PD 04-AUG-2005.
XX
PF 14-JAN-2005; 2005WO-US001147.
VV

XX 16-JAN-2004; 2004US-0537071P.
 PR 14-DEC-2004; 2004US-0636013P.
 PR
 XX
 PA (NOVO) NOVOZYMES NORTH AMERICA INC.
 PA (NOVO) NOVOZYMES AS.
 XX
 PI Allain E, Wenger KS, Bisgard-Frantzen H;
 XX
 DR WPI; 2005-542205/55.
 DR N-PSDB; AEB72816.
 XX
 PT Producing fermentation product e.g. ethanol from starch-containing
 PT material involves saccharifying the material with specific glucoamylase,
 PT at temperature below initial gelatinization temperature of the material
 PT and fermenting.
 XX
 PS Disclosure; SEQ ID NO 15; 96pp; English.
 XX
 CC This sequence represents a carbohydrate-binding module (CBM) from
 CC carbohydrate-binding module Family 20. This sequence may be used in the
 CC construction of a hybrid alpha-amylase protein which may be used in the
 CC method of the invention. The method for producing a fermentation product
 CC from milled starch-containing material involves: saccharifying milled
 CC starch-containing material with the glucoamylase from the fungi *Athelia*
 CC *rolfsii*, at temperature below the initial gelatinization temperature of
 CC starch containing material; and fermenting using a fermenting medium. The
 CC process is carried out for 1 - 250, especially 80 - 130 hours, at pH of 3
 CC - 7, especially 4 - 5. The dry solid (DS) content in the process is 20 -
 CC 55 (preferably 25 - 40, especially 30 - 35) wt.%. The sugar concentration
 CC is kept below 3 wt.% during saccharification and fermentation. A slurry
 CC of water and milled starch-containing material is prepared before step
 CC (a). The milled-starch-containing material is prepared by milling starch-
 CC containing material to a consistency of 0.1 - 0.5 mm mesh.

XX
AC AEI54700;
XX
DT 24-AUG-2006 (first entry)
XX
DE Glucoamylase carbohydrate-binding domain SEQ ID NO:6.
XX
KW textile; glucoamylase.
XX
OS Bacillus sp.
XX
PN WO2006065579-A2.
XX
PD 22-JUN-2006.
XX
PF 01-DEC-2005; 2005WO-US044044.
XX
PR 02-DEC-2004; 2004US-0632611P.
XX
PA (NOVO) NOVOZYMES NORTH AMERICA INC.
XX
PI Wu G, Liu J, Salmon S;
XX
DR WPI; 2006-454552/46.
XX
PT Desizing of sized fabric that contains starch or starch derivatives, in
PT the manufacture of fabric, involves incubation of the sized fabric in
PT aqueous acidic treating solution containing alpha-amylase.
XX
PS Disclosure; SEQ ID NO 6; 114pp; English.
XX
CC The invention relates to desizing of a sized fabric that contains starch
CC or starch derivatives during manufacture, by incubating the sized fabric
CC in an aqueous treating solution with a part of 1 5 (unclassified... 3 4) and

in an aqueous treating solution with a pH of 1-5 (preferably 2-4) and comprising an alpha-amylase. The alpha-amylase (preferably acid alpha-amylase) is of bacterial or fungal, such as filamentous fungus, origin. The alpha-amylase is a derived from *Aspergillus*, *Rhizomucor*, or *Meripilus*. The bacterial alpha-amylase is derived from a strain of *Bacillus* and is preferably AA560 alpha-amylase. The alpha-amylase is a hybrid enzyme having a carbohydrate-binding domain (CBD) (preferably starch-binding domain of fungal or bacterial origin derived from strains of *Aspergillus*, *Athelia*, or *Talaromyces*). The alpha-amylase having a CBD comprises a linker between the alpha-amylase and CBD or starch-binding domain, where the linker is derived from strain of *Athelia* or *Aspergillus*. Alternatively, the alpha-amylase is a hybrid alpha-amylase comprising a catalytic domain (CD) from *Rhizomucor pusillus* alpha-amylase that has a carbohydrate-binding domain (CBD) from the glucoamylase of *Athelia rolfsii*. The method is useful for desizing of sized fabrics (e.g. fabric made from fibres of natural, man-made or animal origin such as cotton fabric, denim, linen, ramie, viscose, lyocell, cellulose acetate, silk, or wool; or polyester fibers of man-made or natural origin such as poly(ethylene terephthalate) or poly(lactic acid); or fibers of nylon, acrylic, or polyurethane; polyester containing fabric or garment that consists of 100% polyester; or the polyester fabric consisting of polyester blend, such as polyester and cellulosic blend, including polyester and cotton blends; polyester and wool blend; polyester and silk blend; polyester and acrylic blend; polyester and nylon blend; polyester, nylon and polyurethane blend; polyester and polyurethane blend, rayon (viscose), cellulose acetate and tencel) during manufacture of fabric. The process facilitates desizing of the fabric during manufacture of new fabrics with traditional sizing/desizing equipments, hence no additional process equipment is required. In the process, demineralization takes place simultaneously and/or after desizing of the sized fabric in the same treating solution as compared to the prior art, thus the process saves time, and reduces cost of e.g. acids and manpower for acid addition as the pH adjustment step is eliminated. This sequence is a glucoamylase

carbohydrate binding domain

CC carbohydrate-binding domain.

XX

SQ Sequence 99 AA;

Query Match 100.0%; Score 531; DB 1; Length 99;
Best Local Similarity 100.0%; Pred. No. 1.6e-50;
Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNIANAIQMTTPSSYPTWKT TVSLPQGKAIE 60
|||||

Db 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNIANAIQMTTPSSYPTWKT TVSLPQGKAIE 60

QY 61 FKFIKKDSAGNVIWENIANRITYTVPFSSSTGSYTANWNV 99
|||||

Db 61 FKFIKKDSAGNVIWENIANRITYTVPFSSSTGSYTANWNV 99

RESULT 6

AOG56868

ID AOG56868 standard; protein; 99 AA.

XX

AC AOG56868;

XX

DT 01-MAY-2008 (first entry)

XX

DE Bacillus sp. alpha-amylase CBD domain protein.

XX

KW Alpha-amylase; endo-alpha-amylase; 1, 4-alpha-D-glucan-glucano-hydrolase;
KW enzyme; EC 3.2.1.1.

XX

OS Bacillus sp.

XX

PN WO2007149699-A2.

vv

XX 27-DEC-2007.

PD 06-JUN-2007; 2007WO-US070485.

XX 21-JUN-2006; 2006US-0815788P.

PF (NOVO) NOVOZYMES NORTH AMERICA INC.

XX (NOVO) NOVOZYMES AS.

PR Liu J, Salmon S, Wu G;

XX WPI; 2008-D53563/25.

PA Combined desizing and scouring of a sized fabric containing starch or

PA starch derivatives during manufacture of a fabric by incubating the sized

PT fabric in an aqueous treating solution comprising an acid amylase and

PT acid scouring enzyme.

XX Disclosure; SEQ ID NO 6; 43pp; English.

PS The present invention provides a process for combined desizing and

XX scouring of a sized fabric containing starch or starch derivatives during

CC manufacture of a fabric. The process involves incubating said sized

CC fabric in an aqueous treating solution having a pH in the range between 1

CC and 7, which aqueous treating solution comprises an alpha-amylase such as

CC acid alpha-amylase (endo-alpha-amylase, 1, 4-alpha-D-glucan-glucano-

CC hydrolase) or hybrid alpha-amylase containing a carbohydrate-binding

CC domain (CBD) and at least one other acid enzyme (such as cellulase,

CC pectinase, lipase, xylanase and protease) facilitating said other fabric

CC treatment steps. Acid amylases of the invention are of bacterial or

CC fungal origin such as filamentous fungus origin. The present sequence is

CC a Bacillus sp. alpha-amylase (EC 3.2.1.1) CBD domain protein.

vv

XX
SQ Sequence 99 AA;

 Query Match 100.0%; Score 531; DB 1; Length 99;
 Best Local Similarity 100.0%; Pred. No. 1.6e-50;
 Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNINAIQMTFPSSYPTWKTTVSLPQGKAIE 60
 |||||
Db 1 TSNVTFTVNNATTVYGQNVYVVGNIPELGNWNINAIQMTFPSSYPTWKTTVSLPQGKAIE 60

QY 61 FKFIKKDSAGNVIWENIANRITYTVPFSSGTYANWNV 99
 |||||
Db 61 FKFIKKDSAGNVIWENIANRITYTVPFSSGTYANWNV 99

RESULT 7
ADW21550
ID ADW21550 standard; protein; 613 AA.
XX
AC ADW21550;
XX
DT 24-MAR-2005 (first entry)
XX
DE Bacillus alpha-amylase for granular starch hydrolysis.
XX
KW Starch; sugar; high fructose starch-based syrup;
KW high fructose corn syrup; fermentation; fuel; ethanol; hydrolysis;
KW sweetener; alpha-amylase; enzyme; EC 3.2.1.1;
KW carbohydrate-binding module.
XX
OS Bacillus.
OS Synthetic.
vv

XX PN WO2004113551-A1.

XX PD 29-DEC-2004.

XX PF 25-JUN-2004; 2004WO-DK000456.

XX PR 25-JUN-2003; 2003DK-00000949.

PR 24-OCT-2003; 2003DK-00001568.

XX PA (NOVO) NOVOZYMES AS.

XX PI Viksoe-Nielsen A, Andersen C, Pedersen S, Hjort C;

XX DR WPI; 2005-075255/08.

XX PT Producing soluble starch hydrolysate comprises subjecting aqueous
PT granular starch slurry below initial gelatinization temperature of
PT granular starch to action of Glycoside Hydrolase Family13 enzyme, and
PT fungal amylase.

XX PS Claim 4; SEQ ID NO 20; 68pp; English.

XX CC The invention relates to a method (M1) of producing a soluble starch
CC hydrolysate. The method involves subjecting an aqueous granular starch
CC slurry to the action of a first and second enzyme, where the first enzyme
CC is member of the Glycoside Hydrolase Family13, having alpha-1,4-
CC glucosidic hydrolysis activity and comprising a functional carbohydrate-
CC binding module (CBM), and a second enzyme chosen from a fungal alpha-
CC amylase (EC 3.2.1.1), a beta-amylase (EC 3.2.1.2) or glucoamylase
CC (commonly known as glucan 1,4-alpha-glucosidase, EC 3.2.1.3). The
CC invention discloses amino acid sequences for functional CBM (SEQ ID Nos 1
CC -3), enzymes having alpha-amylase activity (SEQ ID Nos 4-18), and enzymes
CC having alpha-amylase activity with a functional CBM (SEQ ID Nos 19-22).

CC having alpha-amylase activity with a functional CBM (SEQ ID Nos 19-22).
 CC Also described are: (i) a process (M2) for the production of high
 CC fructose starch-based syrup (HFSS), where a soluble starch hydrolysate
 CC produced by method (M1) is subjected to conversion into HFSS, such as
 CC high fructose corn syrup (HFCS), (ii) a process (M3) for production of a
 CC fermentation product, where a soluble starch hydrolysate produced by
 CC method (M1) is subjected to fermentation into a fermentation product,
 CC such as citric acid, monosodium glutamate, gluconic acid, sodium
 CC gluconate, calcium gluconate, potassium gluconate, glucono delta lactone,
 CC sodium erythorbate, itaconic acid, lactic acid, gluconic acid, ketones,
 CC amino acids, glutamic acid (sodium monoglutamate), penicillin,
 CC tetracycline, enzymes, vitamins, such as riboflavin, B12, beta-carotene
 CC or hormones, (iii) a process (M4) for production of fuel or potable
 CC ethanol, where a soluble starch hydrolysate produced by method (M1) is
 CC subjected to fermentation into ethanol, (iv) use of an enzyme having
 CC alpha-amylase activity in a process for hydrolysis of starch, and (v) use
 CC of an enzyme having alpha-amylase activity in a process for hydrolysis of
 CC granular starch. Method (M1) is useful for producing a soluble starch
 CC hydrolysate which is useful for production of high fructose starch-based
 CC syrup (HFSS), a fermentation product, fuel or potable ethanol. An enzyme
 CC having alpha-amylase is useful for the hydrolysis of granular starch. The
 CC hydrolysates are useful as sweeteners or as precursors for other
 CC saccharides, such as fructose. This sequence represents an alpha-amylase
 CC with a functional CBM.

XX
 SQ Sequence 613 AA;

Query Match 100.0%; Score 531; DB 1; Length 613;
 Best Local Similarity 100.0%; Pred. No. 1.7e-49;
 Matches 99; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSNVTFTVNNATTYQGNVYVVGNIPELGNWNINAIQMTTPSSYPTWKT TVSLPQGAIE 60
 ||||||||||||||||||||||||||||||||||||||||||||||||||||
 515 TSNVTFTVNNATTYQGNVYVVGNIPELGNWNINAIQMTTPSSYPTWKT TVSLPQGAIE 574

Db 515 TSNVTF TVNNATT VYGQNVYVVGNIPELGNWNIANAIQMT PSSYPTWKT TVSLPQKAIE 574

QY 61 FKFIKDSAGNVIWENIANRITYTVPFSSSTGSYTANWNVP 99

575 FKF IKKDSAGNVIWENIANRITYTVPFSSGSYTANWNP 613

RESULT

ADW71773

ID ADW71773 standard; protein; 613 AA.

ADW71773;

24-MAR-2005 (first entry)

Anoxybacillus flavithermus alpha-amylase #3.

alpha-amylase; carbohydrate-binding affinity; surfactant; textile; sweetener; baking; ethanol; fuel; brewing; pulp; paper; bread; enzyme.

Anoxybacillus flavithermus.

Key	Location/Qualifiers
-----	---------------------

Region
1.583

/note="region specifically claimed in claim 1"

Region
1. .455

/note="region specifically claimed in claim 10"

Peptide 1.30

/label= signal_peptide

Protein 31.613

Domain 31.484

/note = catalytic domain

Region	455.	.583
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$\frac{1}{\sqrt{2}}$

FT /note= "region specifically claimed in claim 16"
FT 485. .613
FT /note = carbohydrate binding domain
FT 485. .583
FT /note= "region specifically claimed in claim 25"

XX
PN WO2005001064-A2.

XX
PD 06-JAN-2005.

XX
PF 25-JUN-2004; 2004WO-US023031.

XX
PR 25-JUN-2003; 2003DK-00000949.
PR 25-JUN-2003; 2003US-0482589P.
PR 24-OCT-2003; 2003DK-00001568.
PR 27-OCT-2003; 2003US-0514854P.
PR 12-NOV-2003; 2003US-0519554P.

XX
PA (NOVO) NOVOZYMES AS.
PA (NOVO) NOVOZYMES NORTH AMERICA INC.

XX
PI Hoff T, Andersen C, Spendler T, Pedersen S, Vikso-Nielsen A;
PI Schafer T, Liu J;

XX
DR WPI; 2005-075552/08.
DR N-PSDB; ADW71772.

XX
PT Novel polypeptide having alpha-amylase activity and/or carbohydrate-
PT binding affinity, useful in preparing detergent composition and dough,
PT and in textile desizing.

XX
PS Claim 1; SEQ ID NO 6; 79pp; English.

XX
CA This invention describes a novel polypeptide isolated from *Aspergillus*

